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DF CHASSIS ASSEMBLY
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**FINAL**

# DF CHASSIS ASSEMBLY

## INSTRUCTION MANUAL

**REV. A, MARCH 1985**

# INTRODUCTION

This technical manual provides information required to operate and maintain the DF Chassis Assembly. The use of this manual is intended for a technician who has graduated from a military technical training school or the equivalent. The manual is organized into the following chapters:

## CHAPTER 1, DESCRIPTION OF EQUIPMENT

This chapter describes the purpose of the equipment and gives a listing of its technical characteristics, the equipment supplied, and the publications required. It also provides a brief functional description of the equipment.

## CHAPTER 2, INSTALLATION

This chapter provides inspection methods, a listing of input/output connectors, and location and mounting instructions for installing the equipment. Checkout after installation is also included.

## CHAPTER 3, OPERATING INSTRUCTIONS

This chapter contains operator controls and indicators and operating instructions. It includes procedures to start, operate, and stop the equipment. Emergency operation and operator maintenance are also covered.

## CHAPTER 4, PRINCIPLES OF OPERATION

This chapter consists of a block diagram description to the major circuit level, a detailed circuit description to the active component level, and a description of power distribution within the equipment. These descriptions are keyed to the appropriate block, schematic, or interconnection diagram.

## CHAPTER 5, MAINTENANCE

This chapter includes all the information necessary for a qualified technician to maintain the equipment. It contains a list of test equipment, preventive maintenance routines including a performance test, corrective maintenance not including troubleshooting, and repair procedures.

## CHAPTER 6, PARTS LIST

This chapter lists the replacement parts for the equipment. The parts list is keyed to component location illustrations. A list of part manufacturers is also provided.

## CHAPTER 7, ILLUSTRATIONS

This chapter contains functional block diagrams, interconnection diagrams, schematic diagrams, power distribution diagrams, and component location illustrations for the equipment.

For related publications, refer to paragraph 1-6.

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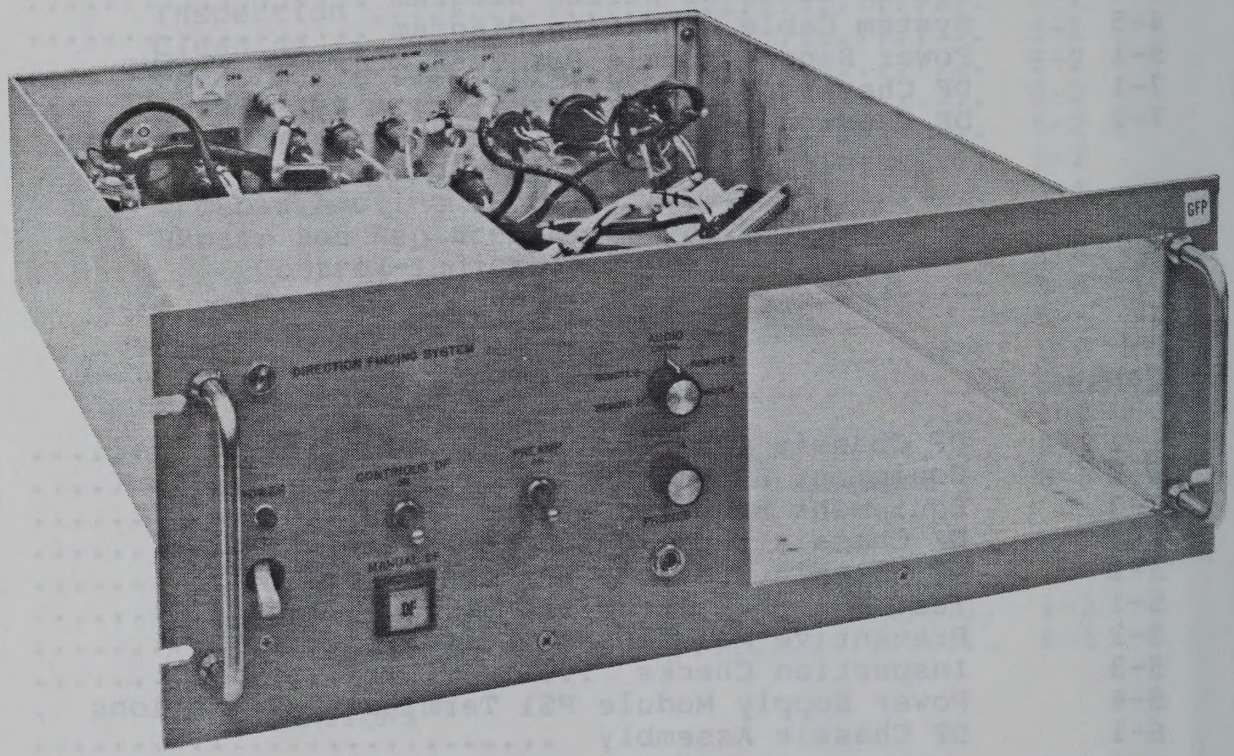



Figure 1-0. DF Chassis Assembly

# CHAPTER 1

## DESCRIPTION OF EQUIPMENT

1-1. SECURITY CLASSIFICAION. The Direction Finder. Chassis Assembly/GRD-503 (figure 1-0) and this manual are unclassified. However, in use, the equipment assumes the classification of companion equipment or data being processed and/or stored.

1-2. PURPOSE AND CAPABILITIES. The Direction Finder Chassis Assembly/GRD-503, hereinafter referred to as the DF Chassis, is used in a direction finder (DF) system to distribute signals to system equipment. The DF Chassis provides interconnecting cabling and mounting hardware for a control-indicator and a receiver. System interconnect cables are supplied to interconnect the DF Chassis to a DF System. DF measurements, either automatically continuous or manual, are initiated from the front panel. Audio signals from the internal receiver and from up to four remote collection receivers may be selected for monitoring.

1-3. TECHNICAL CHARACTERISTICS. The following paragraphs contain physical, electrical, and environmental data for the DF Chassis.

a. Physical Characteristics. The front and rear views of the DF Chassis are shown in figure 1-1. Top and side views are shown in figures 1-2 and 1-3, respectively. The physical characteristics are listed in table 1-1.

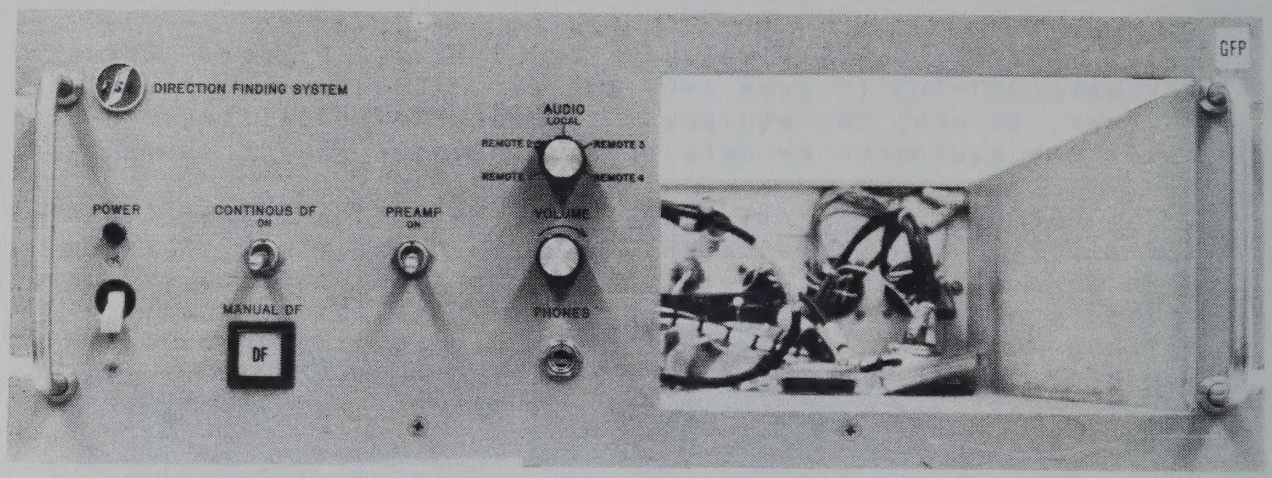
b. Electrical Characteristics. The electrical characteristics of the DF Chassis are listed in table 1-1.

c. Environmental Characteristics. The environmental characteristics of the DF Chassis are listed in table 1-1.

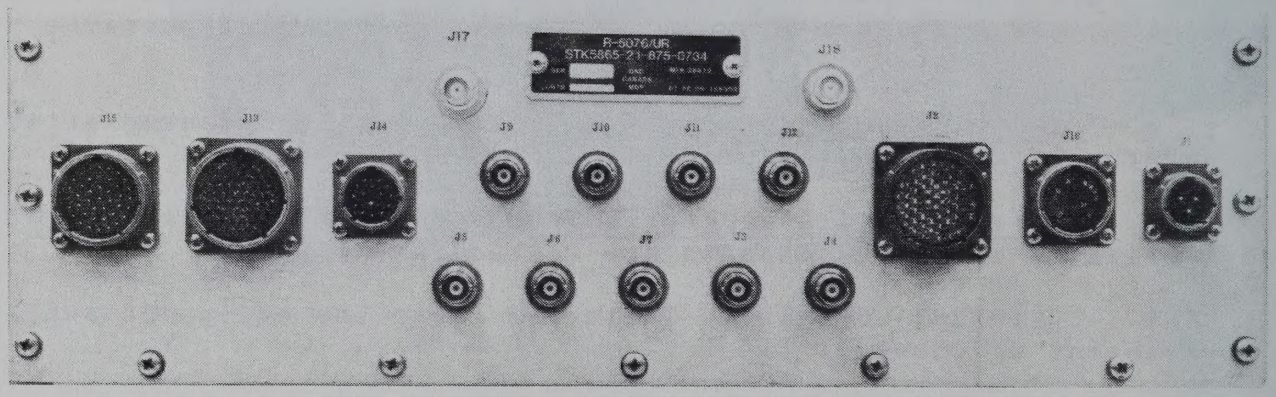
1-4. EQUIPMENT SUPPLIED. Table 1-2 lists the equipment supplied with the DF Chassis.

1-5. EQUIPMENT REQUIRED BUT NOT SUPPLIED. Table 1-3 lists the test equipment and special tools required but not supplied with the DF Chassis.

1-6. PUBLICATIONS REQUIRED. This technical manual is the only publication required for the DF Chassis. Related manuals are those for the DF antenna array, control-indicator, and the radio receiver.




FRONT VIEW




REAR VIEW

Figure 1-1. DF Chassis, Front and Rear Views

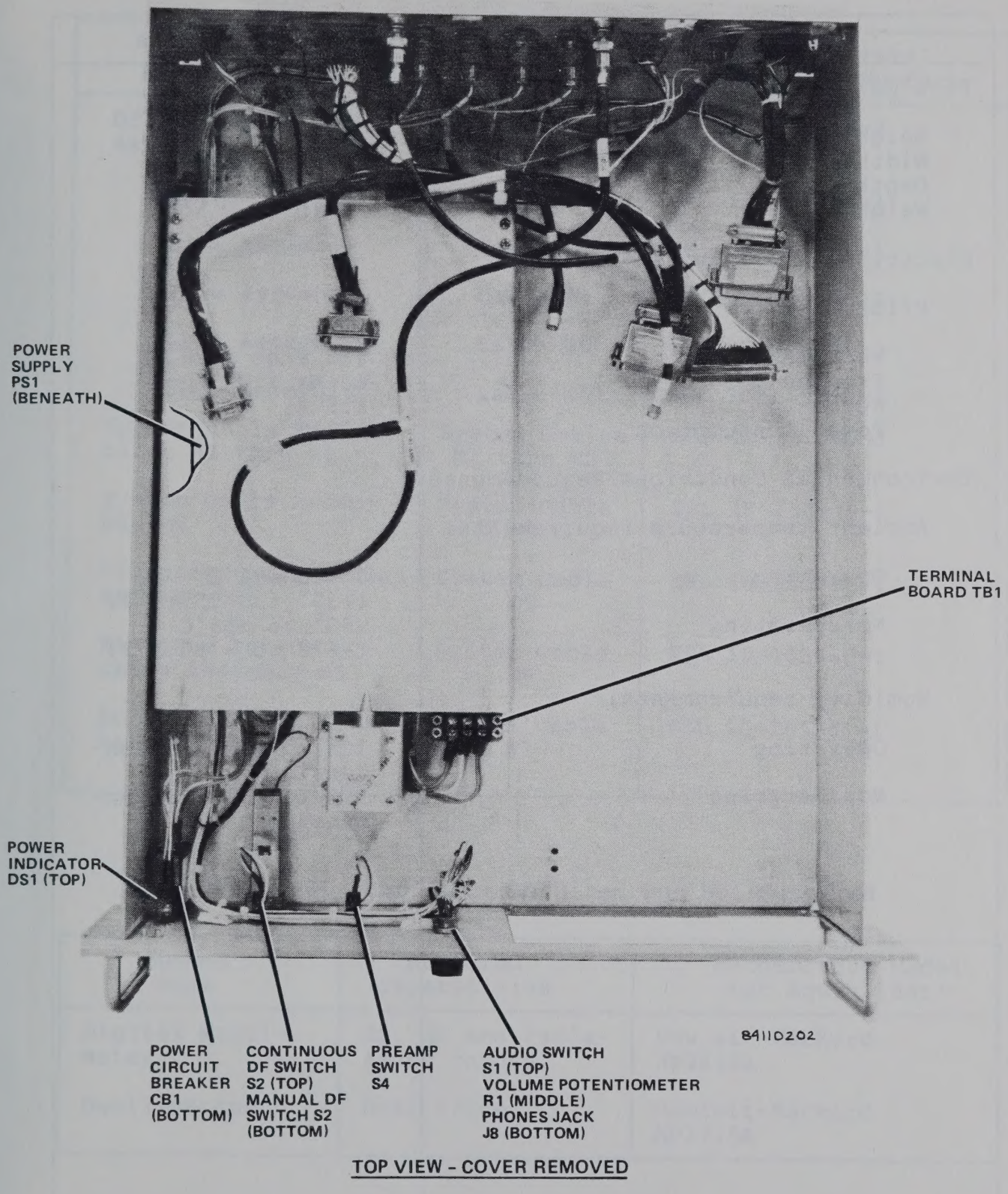

POWER SUPPLY PS1 (BENEATH)
TERMINAL BOARD TB1
POWER INDICATOR DS1 (TOP)
84110202
POWER CIRCUIT BREAKER CB1 (BOTTOM)
CONTINUOUS DF SWITCH S2 (TOP) MANUAL DF SWITCH S2 (BOTTOM)
PREAMP SWITCH S4
AUDIO SWITCH S1 (TOP) VOLUME POTENTIOMETER R1 (MIDDLE) PHONES JACK J8 (BOTTOM)
TOP VIEW - COVER REMOVED

Figure 1-2. DF Chassis, Top View

Table 1-1. DF Chassis Technical Characteristics

| Parameters | Specifications |
|---|---|
| Physical Characteristics | |
| Height | 7 in (18.2 cm) |
| Width | 19 in (49.4 cm) |
| Depth | 22 in (57.2 cm) |
| Weight | 5 lb (2.2 kg) |
| Electrical Characteristics | |
| Primary power: | |
| Voltage | 115 V ac ±10% |
| Frequency | 60 Hz ±10% |
| Current | 1.5 A |
| Power consumption | 173 W |
| Environmental Conditions/Requirements | |
| Ambient temperature requirements: | |
| Operating | 0° to +71°C (+32° to +159.4°F) |
| Nonoperating | -55° to +88°C (-67° to +190.4°F) |
| Humidity requirements: | |
| Operating | 10% to 95% (noncondensing) |
| Nonoperating | 10% to 95% (noncondensing) |

Table 1-2. Equipment Supplied

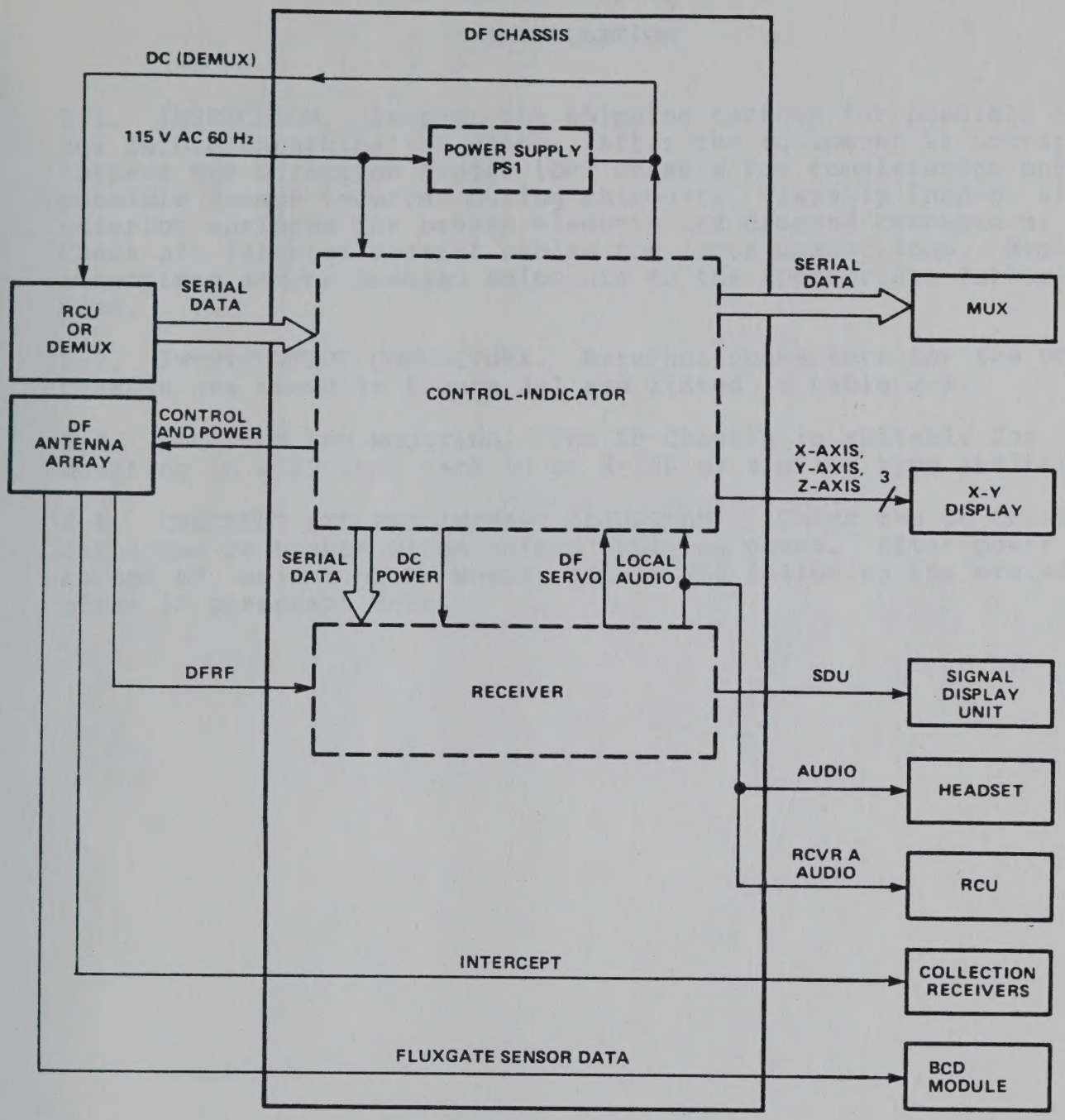
| Official Nomenclature | Common Name | Manufacturers' Model/Part Number |
|---|---|---|
| DF Chassis Assembly | DF Chassis | ESL 10-124465-1 |
| Cable Assembly | Cable W2 | ESL 10-129386-1 |
| Cable Assembly | Cable W3 | ESL 10-129388-1 |
| Cable Assembly | Cable W4 | ESL 10-129388-2 |
| Cable Assembly | Cable W5 | ESL 10-129389-1 |
| Cable Assembly | Cable W6 | ESL 10-129380-1 |
| System Cable Assemblies W1 thru W3 | System Cables W1 thru W3 | ESL 10-165307-1 |
| System Cable Assembly W4 | System Cable W4 | ESL 10-130919-1 |
| Fluxgate Power Cable Assembly W5 | System Cable W5 | ESL 10-165962-1 |
| Fluxgate Sensor Cable Assembly W6 | System Cable W6 | ESL 10-165963-1 |
| Remote Display Cable Assembly W7 | System Cable W7 | ESL 10-165961-1 |

Table 1-3. Equipment Required But Not Supplied

| Common Name | Required Capabilities | Recommended Model (or Equivalent) |
|---|---|---|
| Digital Multimeter | Ac, dc and resistance ranges. | Hewlett-Packard HP3466A |
| Oscilloscope | Dual trace | Hewlett-Packard HP1715A |

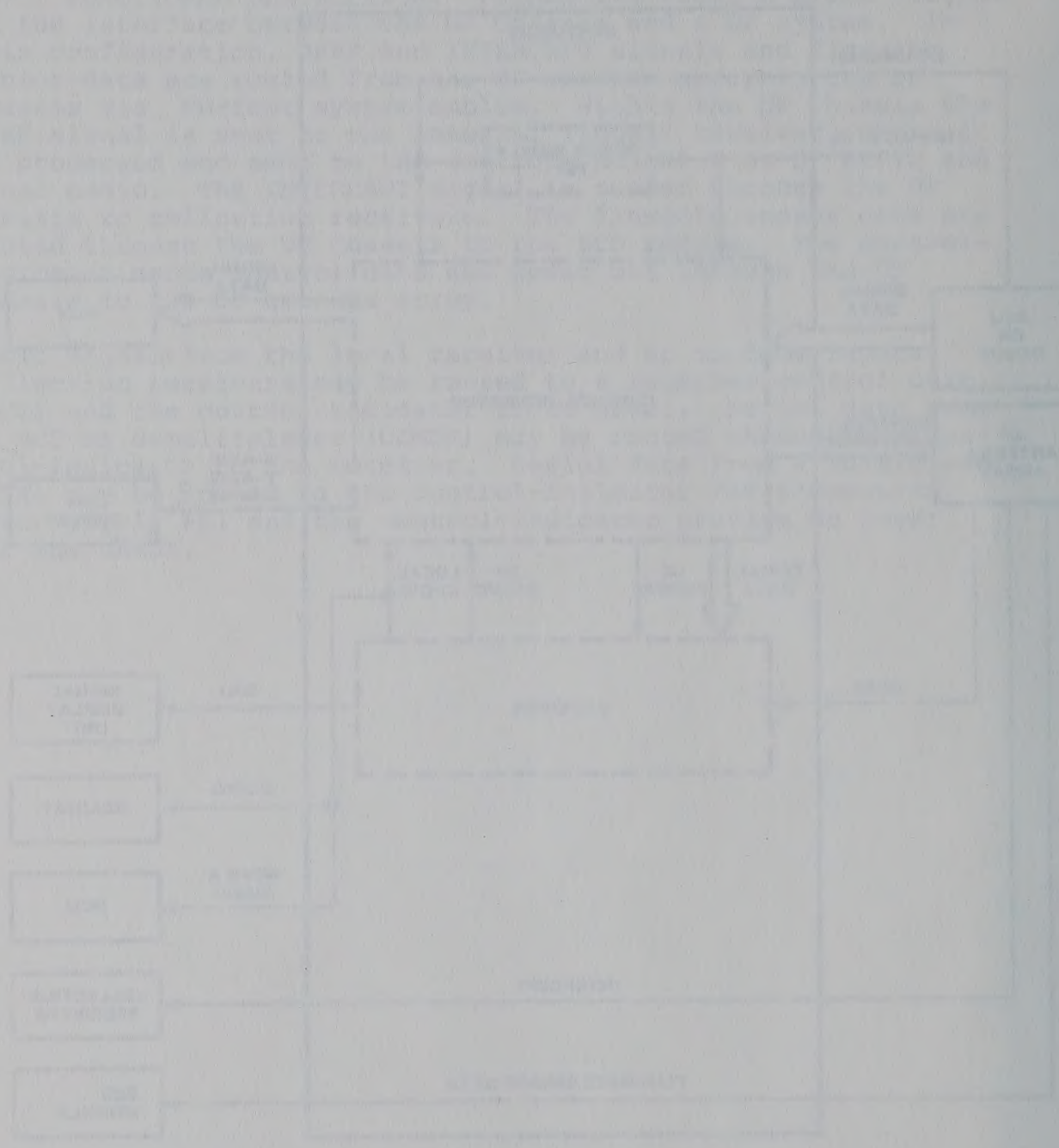
1-7. FUNCTIONAL DESCRIPTION. Figure 1-3 shows a block diagram of the interface between the DF Chassis and a DF system. In this configuration, DFRF and INTERCEPT signals and fluxgate sensor data are routed from the DF antenna array to the DF Chassis via 80-foot system cables. Within the DF Chassis the DFRF signal is sent to the internal (local) receiver, where it is processed and sent to the control-indicator as DF SERVO and local audio. The INTERCEPT signal is routed through the DF Chassis to collection receivers. The fluxgate sensor data are routed through the DF Chassis to the BCD module. The control-indicator sends control data and power out through the DF Chassis to the DF antenna array.

Audio signals from the local receiver and up to four remote collection receivers may be routed to a receiver control unit (RCU) and the control-indicator front panel. Serial data from an RCU or demultiplexer (DEMUX) may be routed through the control-indicator to the receiver. Serial data from a multiplexer (MUX) may be routed to the control-indicator for processing. Power supply PS1 and the control-indicator provide dc power for the DEMUX.




NOTE: DASHED LINES INDICATE UNITS THAT ARE NOT FURNISHED BUT FORM A PART OF THE DF CHASSIS.

Figure 1-3. DF Chassis Simplified Block Diagram



# CHAPTER 2

## INSTALLATION

2-1. INSPECTION. Inspect the shipping cartons for possible damage before unpacking the units. After the equipment is uncrated, inspect the Direction Finder (DF) Chassis for completeness and/or possible damage incurred during shipment. Visually inspect all exterior surfaces for broken elements and damaged connectors. Check all interior coaxial cables for loose connections. Report incomplete and/or damaged shipments to the appropriate authorities.

2-2. INPUT/OUTPUT CONNECTORS. External connectors for the DF Chassis are shown in figure 2-1 and listed in table 2-1.

2-3. LOCATION AND MOUNTING. The DF Chassis is suitable for mounting in a 19-inch rack in an S-250 or similar type shelter.

2-4. CHECKOUT AND PRELIMINARY ADJUSTMENT. Check the DF Chassis for loose or broken wires before applying power. After power is turned on, adjust power supply module PS1 following the procedure given in paragraph 5-5a.

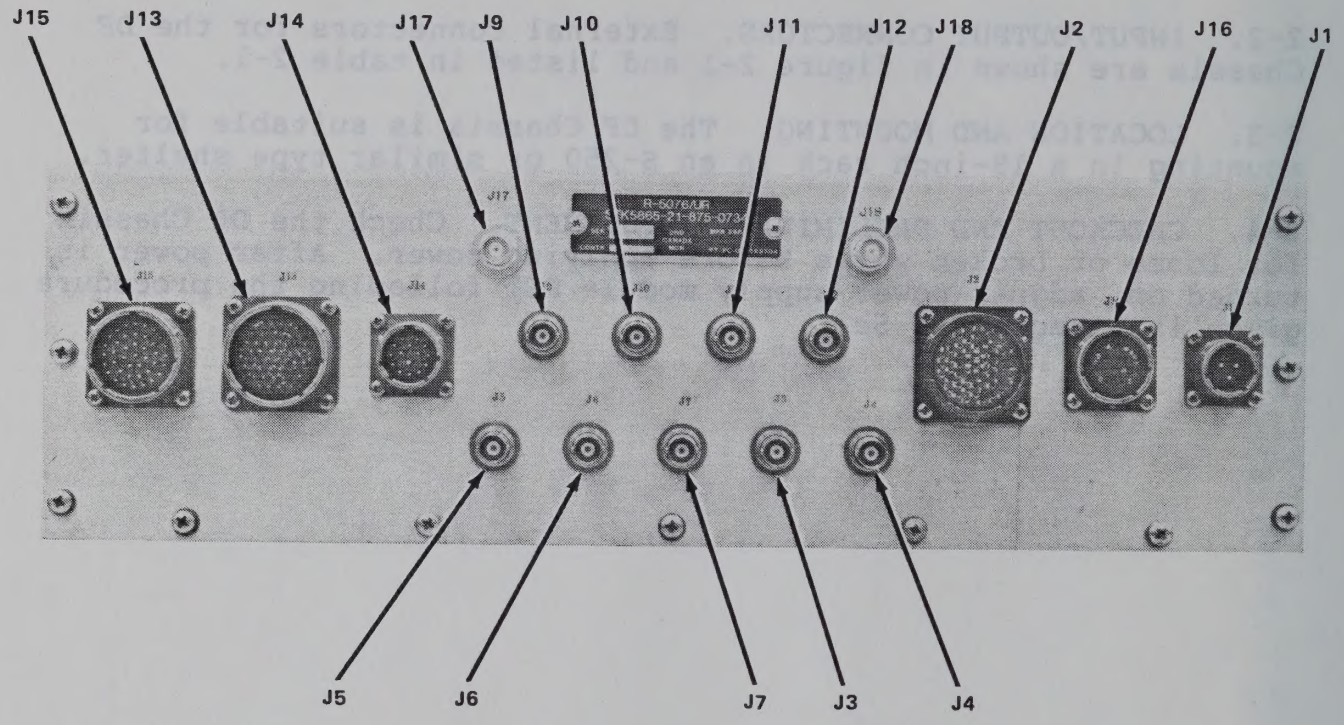



Figure 2-1. DF Chassis Input/Output Connectors

Table 2-1. DF Chassis Input/Output Connectors

| Connector | Function | Connects to |
|---|---|---|
| | Input Connectors | |
| J1 | Primary Power | 115 V ac Power Source |
| J2 | Fluxgate Sensor Data | DF Antenna Array |
| J9 | AUDIO 1 | Remote Collection Receiver |
| J10 | AUDIO 2 | Remote Collection Receiver |
| J11 | AUDIO 3 | Remote Collection Receiver |
| J12 | AUDIO 4 | Remote Collection Receiver |
| J13 | Serial Data and Control | Demultiplexer/Receiver Control Unit (DEMUX/RCU) |
| J17 | DFRF | DF Antenna Array |
| J18 | INTERCEPT | DF Antenna Array |
| | Output Connectors | |
| J2 | Control data and power | DF Antenna Array |
| J3 | INTERCEPT | Collection Receiver |
| J4 | SDU OUT from DF Receiver | Signal Display Unit |
| J5 | X OUT | X/Y Display Unit |
| J6 | Y OUT | X/Y Display Unit |
| J7 | Z OUT | X/Y Display Unit |
| J8 | Audio Monitor Jack | Headphones |
| J14 | Audio and Control | RCU |
| J15 | Serial Data and Control | MUX |
| J16 | Dc Power | DEMUX |

# CHAPTER 3

## OPERATING INSTRUCTIONS

3-1. CONTROLS AND INDICATORS. Front panel controls and indicators for the DF Chassis are shown in figure 3-1 with index numbers keyed to table 3-1. Table 3-1 provides a description of the controls and indicators for the DF Chassis.

3-2. OPERATING INSTRUCTIONS. The following paragraphs provide operating instructions for the DF Chassis. For additional operating information on the control-indicator or receiver, refer to the applicable technical manual.

a. Start. To apply power to the DF Chassis, set the POWER circuit breaker on (up). The front panel POWER indicator lights.

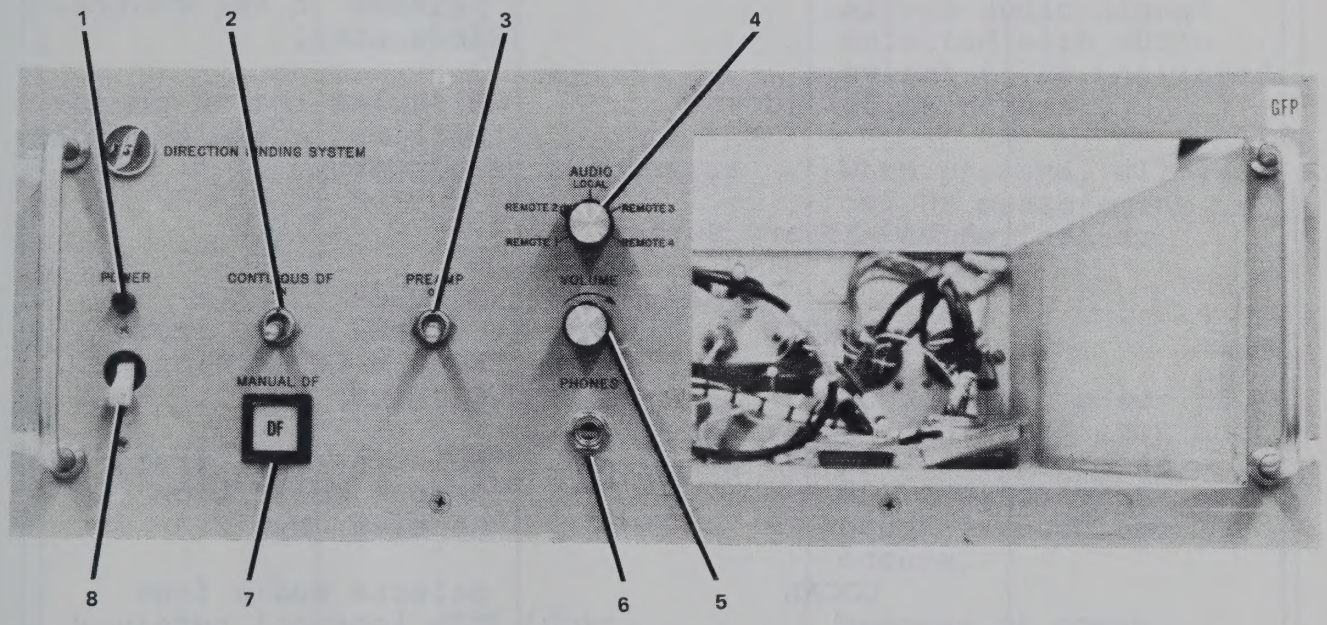



Figure 3-1. DF Chassis Controls and Indicators

Table 3-1. DF Chassis Controls and Indicators

| Figure & Index No. | Control/Indicator | Function |
|---|---|---|
| 3-1 | | |
| -1 | POWER Indicator (DS1) | Indicates that ac power is applied to the DF Chassis. |
| -2 | CONTINUOUS DF Toggle Switch (S3) | |
| | ON | Starts the continuous DF mode of operation. |
| | Off (down) | Stops the continuous DF mode of operation. |
| -3 | PREAMP Toggle Switch (S4) | |
| | ON | Enables the RF preamplifier in the control-indicator. |
| | Off (down) | Disables the RF preamplifier in the control-indicator. |
| -4 | AUDIO Rotary Switch (S1) | |
| | REMOTE 1 | Selects audio from Remote Collection Receiver No. 1. |
| | REMOTE 2 | Selects audio from Remote Collection Receiver No. 2. |
| | LOCAL | Selects audio from the internal receiver. |
| | REMOTE 3 | Selects audio from Remote Collection Receiver No. 3. |

Table 3-1. DF Chassis Controls and Indicators (Continued)

| Figure & Index No. | Control/Indicator | Function |
|---|---|---|
| 3-1 -4 (Cont) | AUDIO Rotary Switch (S1) (Cont) | |
| | REMOTE 4 | Selects audio from Remote Collection Receiver No. 4. |
| -5 | VOLUME Potentiometer (R1) | Clockwise rotation increases volume of signal selected with AUDIO switch. Counterclockwise rotation decreases volume of signal selected. with AUDIO switch. |
| -6 | PHONES Jack (J8) | Allows audio signal selected with AUDIO switch to be monitored using headset. |
| -7 | MANUAL DF Pushbutton Switch (S2) | When pressed, allows one DF measurement to be performed. |
| -8 | POWER Circuit Breaker (CB1) | |
| | On (up) | Connects ac power to control-indicator and power supply module PS1. Disconnects ac power if overload occurs. |
| | Off (down) | Removes ac power from control-indicator and power supply module PS1. |

b. Operate. The front panel CONTINUOUS DF switch enables the operator to select the automatic continuous direction finder mode of operation. To enable the automatic continuous mode, set the CONTINUOUS DF switch to ON. In this mode, the control-indicator automatically performs continuous direction finder measurements. To disable the continuous mode, set the CONTINUOUS DF switch to off (down).

The front panel MANUAL DF switch enables the operator to select the manual direction finder mode of operation. To enable the manual mode, verify that the CONTINUOUS DF switch is set to off (down) and press the MANUAL DF switch. In this mode, the control-indicator performs a single direction finder measurement.

The front panel PREAMP switch controls a preamplifier in the RF processor of the DF antenna array and enables the operator to select the preamplifier when required. To enable the preamplifier, set the PREAMP switch to ON. In this position, the preamplifier provides 10 to 12 dB of amplification to the received signal. To disable the preamplifier, set the PREAMP switch to off (down).

The front panel AUDIO switch enables the operator to select the audio signal from the LOCAL (internal) receiver or from any of four REMOTE receivers. The selected signal is routed to the RCU and to the front panel PHONES output jack for operator monitoring. The front panel VOLUME control sets the level of the signal at the PHONES output jack.

c. Emergency Operation. The front panel POWER circuit breaker provides overload protection for the DF Chassis. If the POWER circuit breaker trips during normal operation, attempt to reset it. If it cannot be reset, notify maintenance personnel.

d. Stop. To turn off the DF Chassis, set the POWER circuit breaker to off (down).

3-3. OPERATOR MAINTENANCE. There is no operator maintenance for the DF Chassis.

# CHAPTER 4

## PRINCIPLES OF OPERATION

4-1. INTRODUCTION. This chapter contains a functional description of the circuitry contained in the DF Chassis. The description is divided into three parts consisting of a block diagram description, a detailed circuit description, and power distribution.

4-1. BLOCK DIAGRAM DESCRIPTION. Figure 4-1 shows a functional block diagram of the DF Chassis. The DF Chassis provides the wiring and connectors required to interconnect the control-indicator and the receiver. For additional functional descriptions of the control-indicator or receiver, refer to the appropriate technical manuals.

The DF Chassis also provides the connectors required to interconnect a direction finder (DF) system. System interconnect cables W1 thru W7 are used to connect the DF Chassis to a DF system. Figures 4-2 thru 4-5 show wiring diagrams of the system interconnect cables. System cables W1 thru W3 consitute an 80-foot cable connecting the DF Chassis to the DF antenna array. System cable W1 routes control data and power from DF Chassis connector J2 to connector J1 of the DF antenna array. System cable W1 also routes fluxgate sensor data from the DF antenna array to the DF Chassis. System cable W2 routes the DFRF signal from connector J2 of the DF antenna array to connector J17 on the DF Chassis. System cable W3 routes the INTERCEPT signal from connector J3 of the DF antenna array to connector J18 of the DF Chassis. System cable W4 routes power to connector J1 of the DF Chassis from a 115-V ac source. System cable W5 routes power from connector J16 of the DF Chassis to the BCD module. System cable W6 routes fluxgate sensor data from DF Chassis connector J15 to the BCD module. System cable W7 connects the BCD module to a remote display.

4-3. DETAILED CIRCUIT DESCRIPTION. Figure 7-1 shows a wiring diagram of the DF Chassis. The DF Chassis consists of internal cables W2 thru W6 (table 1-2), front panel switches S1 thru S4, and power supply module PS1. All DF Chassis inputs and outputs are routed through connectors J1 thru J18. Refer to figure 7-1 while reading the following circuit descriptions.

a. Cable W2. Cable W2 routes SERIAL DATA, CLK, and LOAD signals from the control-indicator to the receiver. The cable also routes AUDIO and DF AUDIO (DF SERVO) from the receiver to the control-indicator. In addition, cable W2 routes ±15, +5, and +36 V dc from the control-indicator to the receiver. Cable W2 also routes ±15 and +5 V dc from the control-indicator to connector J16 of the DF Chassis.

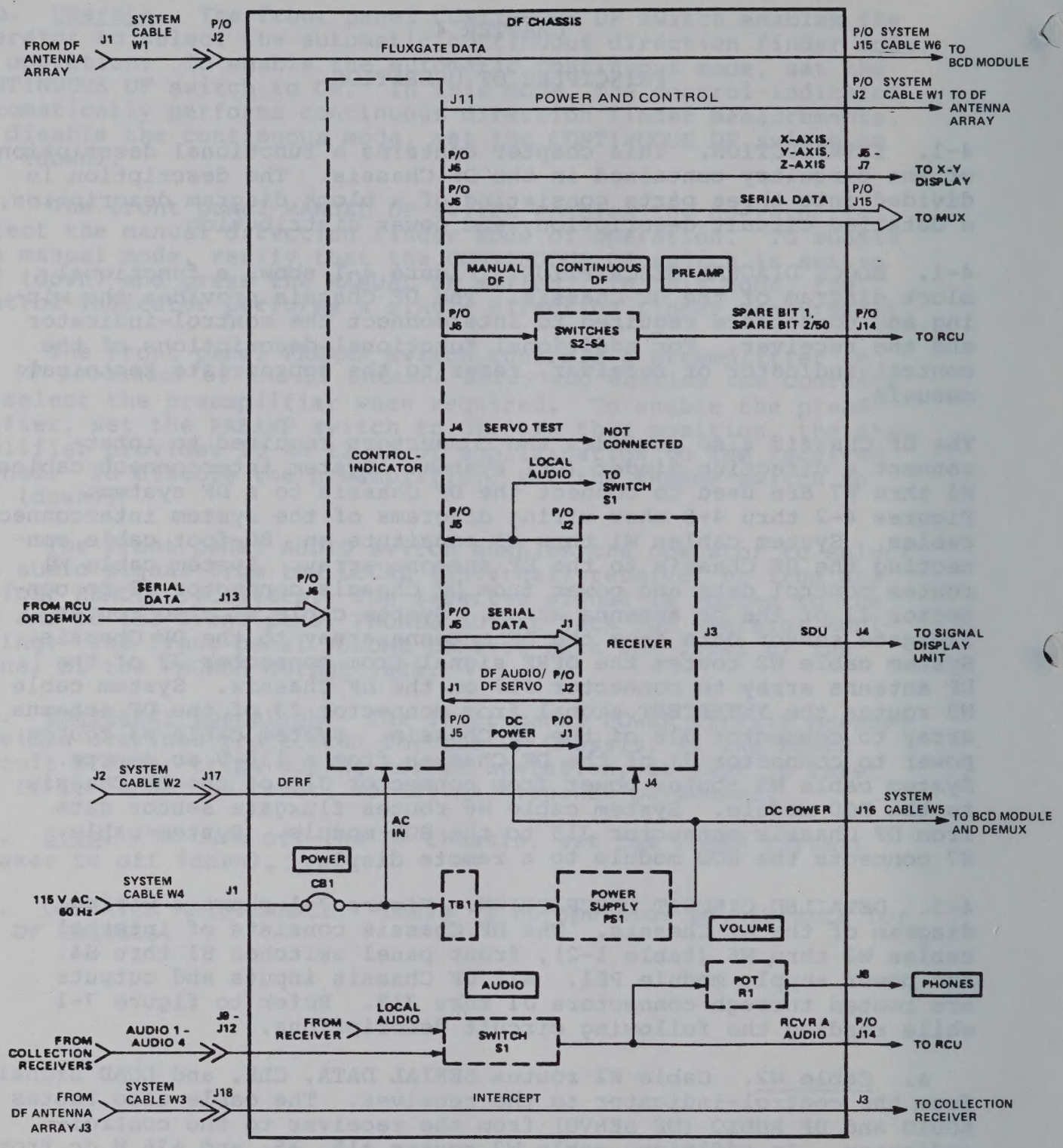



Figure 4-1. DF Chassis Functional Block Diagram

P1
P2
A WHT A DLS0
B BLK B DLS0
C WHT C DLS1
D BLK D DLS1
E WHT E DLS2
F BLK F DLS2
G WHT G DLS3
H BLK H DLS3
J WHT J DLS4
K BLK K DLS4
L WHT L DLS5
M BLK M DLS5
N WHT N DLS6
P BLK P DLS6
R WHT R DLS7
S BLK S DLS7
T WHT T RFS0
U BLK U RFS0
V WHT V RFS1
W BLK W RFS1
X WHT X RFS2
Y BLK Y RFS2
Z WHT Z RFS5
A BLK A RFS5
B WHT B RFS6
C BLK C RFS6
D WHT D RFS7
E BLK E RFS7
F WHT F MODS0
G BLK G MODS0
H WHT H DISABLE
I BLK I VSS
J WHT J Z OUT
K BLK K SPARE
M WHT M SINE (Y)
N BLK N SIG GND
P WHT P COSINE (X)
Q BLK Q SIG GND
R WHT R TILT
S BLK S SPARE
T WHT T BITE 3
U BLK U GND
V WHT V +15 V
W BLK W GND
X WHT X SPARE
Y BLK Y GND
Z WHT Z +15 V
AA BLK AA GND
BB WHT BB SPARE
CC BLK CC SPARE
DD WHT DD SPARE
EE BLK EE SPARE
FF WHT FF SPARE
GG BLK GG GND
HH GRN HH GND
GRN

Figure 4-2. System Cable W1 Wiring Diagram

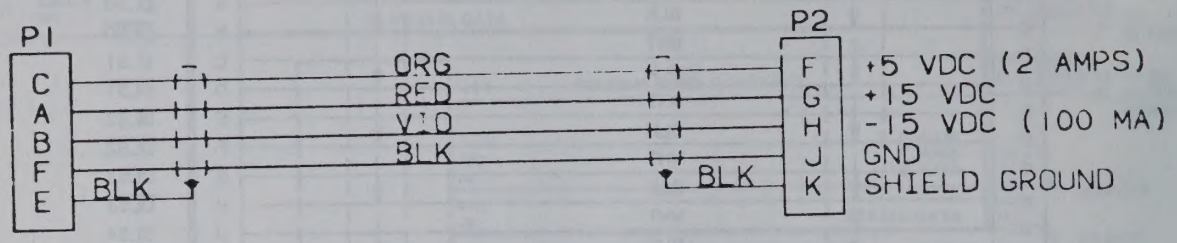



Figure 4-3. System Cable W5 Wiring Diagram

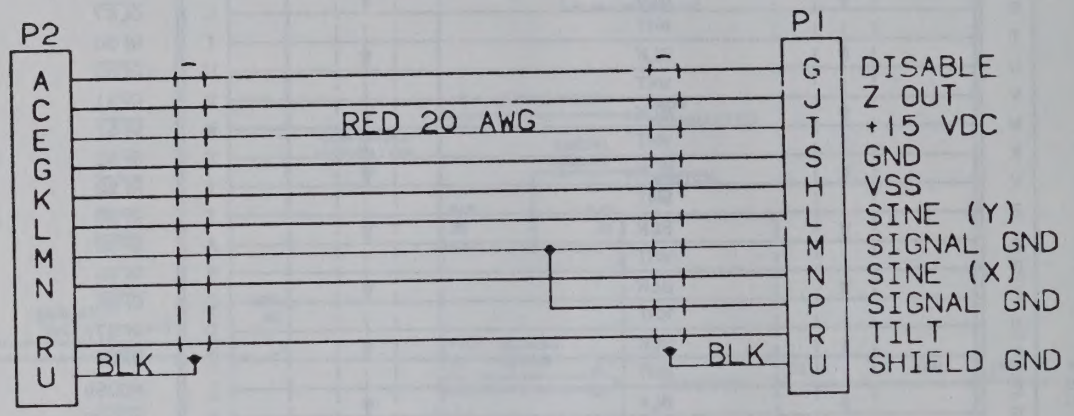



Figure 4-4. System Cable W6 Wiring Diagram

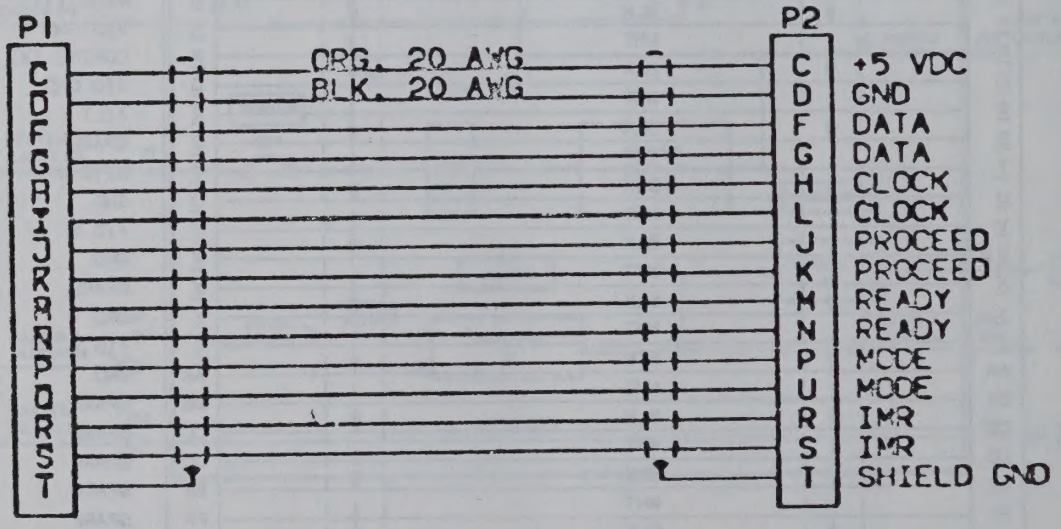



Figure 4-5. System Cable W7 Wiring Diagram

b. Cable W3. Cable W3 routes the signal display unit (SDU) output of the receiver to 10-dB attenuator AT1. The attenuator is part of connector J4 of the DF Chassis.

c. Cable W4. Cable W4 routes the INTERCEPT signal from connector J18 of the DF Chassis to connector J3 of the DF Chassis. A separate (collection) receiver may be connected to DF Chassis connector J3 for monitoring the selected INTERCEPT signal.

d. Cable W5. Cable W5 routes the DFRF signal from connector J17 of the DF Chassis to ANT connector J4 of the receiver.

e. Cable W6. Cable W6 routes control data and power from control-indicator connector J11 to DF Chassis connector J2. These data are then sent to the DF antenna array. Cable W6 also routes fluxgate sensor data from DF Chassis connector J2 to DF Chassis connector J15. Cable W6 also routes SERIAL DATA, CLK, and LOAD signals from a receiver control unit (RCU) or demultiplexer (DEMUX) through connector J13 of the DF Chassis to connector J6 of the control-indicator. SERIAL DATA (DATA PNL 1), CLK (CLK PNL 1), and LOAD (READ PNL 1) signals from a MUX may be routed through connector J15 of the DF Chassis to connector J6 of the control-indicator. In addition, the X-, Y-, and Z-axis outputs of the control-indicator are routed to connectors J5, J6, and J7, respectively, of the DF Chassis.

f. AUDIO Switch S1. Signals from up to four remote receivers may be routed to AUDIO switch S1 through connectors J9 thru J12 of the DF Chassis. The AUDIO output from connector J2 of the internal (local) receiver is also selected by switch S1 and routed to the RCU through connector J14 of the DF Chassis. The selected signal is also routed through front panel AUDIO jack J8 to the operator headset. Potentiometer R1 sets the volume level of the signal monitored by the operator.

g. MANUAL DF Switch S2. Cable W6 connects MANUAL DF switch S2 to connector J14 of the DF Chassis and connector J6 of the control-indicator. Switch S2 is used to start a single DF measurement. When switch S2 is pressed, a ground (low) passes from pin 5 to pin 17 of connector J6 of the control-indicator. The signal is output as SPARE BIT 2 through connector J6, pin 4 of the control-indicator. The signal is then routed to the RCU through connector J14, pin R of the DF Chassis.

h. CONTINUOUS DF Switch S3. Cable W6 connects CONTINUOUS DF switch S3 to connector J14 of the DF Chassis and connector J6 of the control-indicator. Switch S3 is used to initiate the continuous DF operating mode. When switch S3 is set to ON, a ground (low) is output as SPARE BIT 50 from connector J6, pin 5 of the control-indicator. The signal is then routed to the RCU through connector J14, pin L of the DF Chassis.

i. PREAMP Switch S4. Cable W6 connects PREAMP switch S4 to connector J14 of the DF Chassis and connector J6 of the control-

indicator. Switch S4 is used to enable the RF preamplifier in the control-indicator. When switch S4 is set to ON, a ground (low) is output as SPARE BIT 1 from connector J6, pin 5 of the control-indicator. The signal is then routed to the RCU through connector J14, pin J of the DF Chassis.

4-4. POWER DISTRIBUTION. Figure 7-1 shows power distribution for the DF Chassis. The 115-V ac power is input through connector J1 via system cable W4. Power is routed through circuit breaker CB1 to the control-indicator and through terminal board TB1 to power supply module PS1. Ac power for the control-indicator and power supply module PS1 is controlled by the DF Chassis. Dc power for the receiver and DEMUX is provided by the control-indicator and power supply module PS1. The following paragraphs describe power distribution within the DF Chassis.

a. AC Power Distribution. Ac power for the control-indicator and power supply module PS1 is controlled by POWER circuit breaker CB1. When POWER circuit breaker CB1 is set to the on (up) position, the 115 V ac input is applied through connector J1 of the DF Chassis to terminal board TB1. POWER indicator DS1 lights when primary power is applied to the DF Chassis.

b. DC Power Distribution. The dc power used by the receiver and the DEMUX is provided by the control-indicator and power supply module PS1. Cable assembly W2 routes +5, ±15, and +36 V dc from control-indicator connector J5 to connector J1 of the receiver. The +5 V dc output of power supply module PS1 and ±15 V dc outputs of the control-indicator are routed to the DEMUX through connector J16 of the DF Chassis.

# CHAPTER 5

# MAINTENANCE

5-1. INTRODUCTION. This chapter contains preventive and corrective maintenance information for the DF Chassis. To isolate defective components, use standard troubleshooting procedures in conjunction with the principles of operation in chapter 4, the parts list information in chapter 6, and the illustrations in chapter 7.

5-2. EQUIPMENT REQUIRED. Table 5-1 lists the test equipment required to perform maintenance on the DF Chassis. The recommended model or an equivalent substitute may be used.

5-3. PREVENTIVE MAINTENANCE. Preventive maintenance for the DF Chassis consists of scheduled inspection and cleaning.

a. Schedule. Table 5-2 provides a list of the preventive maintenance routines and the recommended performance intervals.

b. Inspection. Table 5-3 provides a listing of the visual inspection checks to be performed. It also lists the corrective action to be taken.

Table 5-1. Test Equipment Required

| Common Name | Required Capabilities | Recommended Model (or equivalent) |
|---|---|---|
| Digital Multimeter | Ac, dc, and resistance ranges | Hewlett-Packard HP3466A |
| Oscilloscope | Dual trace | Hewlett-Packard HP-1715A |

Table 5-2. Preventive Maintenance Schedule

| Preventive Maintenance Routine | Recommended Performance Interval |
|---|---|
| Inspection | 30 days |
| Cleaning | 30 days |

c. Cleaning. Cleaning requirements are based on the need established during inspection. If it is determined that cleaning is required, follow the instructions listed in the corrective action column of table 5-3.

Table 5-3. Inspection Checks

| Item | Inspect For | Corrective Action |
|---|---|---|
| Connectors | Loose, bent, broken or corroded contacts | Clean contacts with cloth moistened with cleaning solvent. |
| Chassis and front panel | Dirt and corrosion | Clean with cloth moistened with cleaning solvent. |
| Wiring | Looseness or breakage | Resolder, recable or reclamp. |
| | Frayed, worn, or missing insulation | Replace as required. |
| Knobs, screws, connectors, clamps | Looseness or breakage | Tighten using appropriate torque to avoid stripping threads. |
| Solder joints | Loose or cold solder connections; corrosion | Clean carefully and resolder using recommended solder and soldering iron. |
| Switch contacts | Dirt, dust, and/or corrosion | Clean with cloth, aerosol spray, syringe, or camel hair brush using cleaning solvent. |

d. Performance Test. The DF Chassis does not require a performance test. The performance test for the control-indicator, contained in the applicable technical manual, tests all of the DF Chassis circuitry except power supply PS1.

5-4. CORRECTIVE MAINTENANCE. The following paragraphs provide information for adjusting and troubleshooting the DF Chassis.

a. Adjustments. The DF Chassis contains a +5 V dc power supply module that periodically requires adjustment. Adjustment must be performed when power supply module PS1 has been replaced.

(1) Power Supply Module PS1 Adjustment. Figure 5-1 shows the test equipment setup and adjustment locations for power supply module PS1. Table 5-4 lists the signal connections for power supply module PS1. Perform the following steps to adjust power supply module PS1:

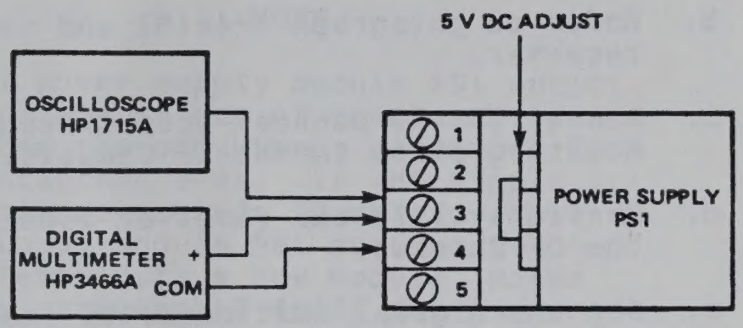



Figure 5-1. Power Supply Module PS1 Test Equipment Setup

Table 5-4. Power Supply Module PS1 Terminal Designations

| Terminal number | Signal connection |
|---|---|
| 1 | 115 V ac |
| 2 | 115 V ac return |
| 3 | +5 V dc |
| 4 | Ground |
| 5 | -5 V dc (not used) |

**WARNING**

Hazardous voltages are present within the DF Chassis.

a. Set the POWER circuit breaker to off (down).

b. Refer to paragraph 5-4c(5) and remove the receiver.

c. Remove the 10 panhead screws securing the receiver mounting plate to the DF Chassis.

d. Carefully lift the receiver mounting plate out of the DF Chassis.

e. Set the digital multimeter to read positive dc voltage in the 0 - 10 V range.

f. Set the oscilloscope to read 10 mV ac.

g. Connect the digital multimeter and oscilloscope as shown in figure 5-1.

h. Set the POWER circuit breaker to on (up). The digital multimeter should indicate +5 V dc (±0.25 V dc).

i. To adjust power supply module PS1, loosen the adjustment screw locknut (figure 5-1) and turn the adjustment screw until the digital multimeter indicates +5 V dc (±0.25 V dc).

j. Tighten adjustment screw locknut and recheck digital multimeter indication. Readjust if necessary.

k. Observe oscilloscope. Power supply module PS1 ripple voltage should not exceed 10 mV p-p. If it does, power supply module PS1 must be replaced with a new module.

l. Set POWER circuit breaker CB1 to off (down).

m. Reinstall the receiver mounting plate using 10 panhead screws.

n. Refer to paragraph 5-4c(6) and reinstall the receiver.

b. Troubleshooting. Troubleshooting the DF Chassis consists of ensuring proper output of power supply module PS1 and checking continuity between connectors of cable assemblies W2 thru W6. To

locate faulty connectors or loose or broken wires, use standard troubleshooting procedures in conjunction with the principles of operation in chapter 4, the parts list information in chapter 6, and the illustrations in chapter 7.

Connect the digital multimeter and oscilloscope as shown in figure 5-1. Ensure that power supply module output is +5 V dc (±0.25 V dc) with less than 10 mV p-p ripple voltage.

**NOTE**

If power supply module PS1 output voltage is out of tolerance, perform the adjustment procedure in paragraph 5-4a. If the ripple voltage exceeds 10 mV p-p, power supply module PS1 must be replaced with a new module. Refer to paragraph 5-4c(7) for power supply module removal procedures.

c. Repair and Replacement of Parts. Refer to chapter 6 for parts list information and chapter 7 for illustrations of component locations. The following paragraphs describe the removal and replacement of major components in the DF Chassis.

(1) Control-Indicator Repair. For information on control-indicator repair, refer to the applicable technical manual.

(2) Control-Indicator Removal. Removing the control-indicator involves disconnecting the power cable and all cables connected to the rear panel connectors, and removing the screws securing the control-indicator to the DF Chassis. Perform the following steps to remove the control-indicator:

**WARNING**

Hazardous voltages are present within the DF Chassis.

a. Set the POWER circuit breaker to off (down).

b. Disconnect the control-indicator power cable from terminal board TB1.

c. Remove the 6 panhead screws securing the control-indicator to the DF Chassis.

**CAUTION**

Ensure that some slack is left in the cables when sliding the control-indicator out. Damage to the cables may result if they are stretched too far.

d. Slide the control-indicator out approximately 4 inches to gain access to the connectors.

e. Remove the cables from connectors J1, J4 thru J6, and J11 on the control-indicator.

f. Slide the control-indicator out until it is clear of the DF Chassis.

(3) Control-Indicator Replacement. Perform the following steps to replace the control-indicator:

**CAUTION**

To avoid damage to the cables or connectors, do not slide the control-indicator all the way into its mounting position until the cables are reconnected.

a. Slide the control-indicator approximately two-thirds of the way into its mounting position.

b. Connect the DF Chassis cables to corresponding connectors J1, J4 thru J6, and J11 on the control-indicator.

c. Gently slide the control-indicator completely into its mounting position.

d. Secure the control-indicator to the DF Chassis using 6 panhead screws.

(4) Receiver Repair. For information relating to repair of the receiver, refer to the applicable technical manual.

(5) Receiver Removal. Perform the following steps to remove the receiver from the DF Chassis.

**WARNING**

Hazardous voltages are present within the DF Chassis.

a. Set the POWER circuit breaker to off (down).

b. Remove all of the cables from external connectors J1 thru J5 on the receiver.

c. Loosen the two airborne transport releases (ATRs) until free of the receiver.

d. Slide the receiver toward the rear of the DF Chassis until clear of the guide pin and lift it out.

**NOTE**

The guide pin is spring-loaded and moves inside the retainer.

(6) Receiver Replacement. Perform the following steps to replace the receiver:

a. Place the receiver on the receiver mounting plate with the external connectors facing the rear of the DF Chassis.

b. Slide the receiver toward the front of the DF Chassis until the guide pin spring is fully compressed. Hold in place while performing the following step.

c. Lift the ATRs into position and hand tighten.

(7) Power Supply Module PS1 Removal.

**NOTE**

Power supply module PS1 is not repairable. If it fails, it must be replaced with a new module.

Power supply module PS1 is located under the receiver mounting plate. To gain access to power supply module PS1, the receiver and receiver mounting plate must be removed. Removal of power supply module PS1 consists of disconnecting the wires and removing the screws securing power supply module PS1 to the DF Chassis. Perform the following steps to remove power supply module PS1:

**WARNING**

Hazardous voltages are present within the DF Chassis.

a. Set the POWER circuit breaker to off (down).

b. Remove the receiver by performing the procedure given in paragraph 5-4c(5).

c. Remove the 10 panhead screws securing the receiver mounting plate to the DF Chassis.

d. Remove the wires from power supply module PS1.

e. Remove the 4 panhead screws securing power supply module PS1 to the DF Chassis and lift the module out.

(8) Power Supply Module PS1 Replacement. Perform the following steps to replace power supply module PS1:

a. Position power supply module PS1 in its mounting location.

b. Secure power supply module PS1 to the DF Chassis using 4 panhead screws.

c. Connect the wiring to power supply module PS1.

d. Position the receiver mounting plate in its mounting location.

e. Secure the receiver mounting plate to the DF Chassis using 10 panhead screws.

f. Reinstall the receiver by following the procedure given in paragraph 5-4c(6).

# CHAPTER 6

## PARTS LIST

6-1. INTRODUCTION. The repair parts list contains the major parts required to maintain the DF Chassis. To ensure accurate procurement of replacement parts, the information contained in the parts list columns must be used effectively. The following paragraphs describe the parts list format and include an explanation of the information presented in each of the columns.

The REFERENCE SYMBOL OR PART NUMBER column contains the reference designations of the electrical components in reference designator sequence. The NAME OF PARTS AND DESCRIPTION column contains the standard identifying noun or item name, followed by electrical characteristics, federal stock code (FSC), and true manufacturer's part number. The ALL SYMBOLS AND PART NUMBERS INVOLVED column contains additional reference designations, with the same part number, used in the assembly.

The JAN OR MIL TYPE NUMBER column contains the joint Army-Navy (JAN) or military (MIL) type number as applicable. The TOTAL NUMBER PARTS PER END ITEM column is the total quantity of identical parts used in the assembly.

6-2. LIST OF MANUFACTURERS. The following list of manufacturers' code designations is in accordance with the Federal Supply Code for Manufacturers, Cataloging Handbooks H4-1 and H4-2.

| FSC Code | Manufacturer |
|---|---|
| 08719 | Jay-El Products, Gardena, CA 90247 |
| 13511 | Amphènol, Cadre Div, Bunker Ramo Corp, Los Gatos, CA 95030 |
| 13925 | American Home Products Corp, Milton, PA 17847 |
| 23043 | N T N Bearing Corp of America, Des Plaines, IL 60018 |
| 24429 | Powertec Inc, Chatsworth, CA 91311 |
| 26805 | Omni Spectra Inc, Microwave Connector Div, Waltham, MA 02154 |
| 27193 | Eaton Corp, Specialty Products Div, Milwaukee, WI 52316 |
| 28815 | ESL Inc, Sunnyvale, CA 94086 |

| FSC Code | Manufacturer |
|---|---|
| 71468 | ITT Canon, Electric Div of International Telephone and Telegraph Corp, Fountain Valley, CA 93643 |
| 72619 | Dialight Div, Amperex Electronic Corp, Brooklyn, NY 11237 |
| 74193 | Heinmann Electric Co, Trenton, NJ 08650 |
| 81073 | Grayhill Inc, La Grange, Il, 60525 |
| 81349 | Military Specification |
| 83330 | Herman H. Smith, Inc, Brooklyn, NY 11207 |
| 86797 | Rogan Corp, Northbrook, Il 60062 |
| 91836 | Kings Electronics Co Inc, Truckahoe, NY 10707 |
| 96906 | Military Standards |

Table 6-1. DF Chassis Assembly (Sheet 1 of 3)

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| | DF CHASSIS ASSEMBLY: FSC 28815; P/N 10-124465-1 (see figure 7-1). | | | |
| AT1 | ATTENUATOR: FSC 23043: P/N FP-50/10BNC. | AT1 | | 1 |
| CB1 | CIRCUIT BREAKER: FSC 74193; P/N JA1-A2-A-3-2. | CB1 | | 1 |
| CP1,CP2 | JACK SCR ASSEMBLY: FSC 71468; P/N D110550 | CP1,CP2 | | 2 |
| DS1 | INDICATOR, light: FSC 72619; P/N CN-03-RCS-N123 | DS1 | | 1 |
| E1 | TERMINAL STUD: FSC 81349; P/N SEZ6XF015. | E1 | | 1 |
| J1 | CONNECTOR, receptacle: electrical; 3-pin; 16-gauge; FSC 96906 | J1 | MS3122E12-3P | 1 |
| J3 thru J7, J9 thru J12 | CONNECTOR, adapter: FSC 81349 | J3, J4, J5, J6, J7, J9, J10, J11, J12 | M55339/13-00492 | 9 |
| J8 | JACK, phone: FSC 83330: P/N 275 | J8 | | 1 |

Table 6-1. DF Chassis Assembly (Sheet 2 of 3)

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| J13 | CONNECTOR, receptacle: electrical; FSC 96906. | J13 | MS3122E22-55SW | 1 |
| J14 | CONNECTOR, receptacle: electrical; 1 pin, 16-gauge; 14-pin, 20-gauge; FSC 96906. | J14 | MS3122E14-15P | 1 |
| J16 | CONNECTOR, receptacle: electrical; 8-socket; 16-gauge; FSC 96906. | J16 | MS3122E16-8S | 1 |
| J17,J18 | CONNECTOR, bulkhead: FSC 91836 | J17,J18 | UG-492B/U | 2 |
| PS1 | POWER SUPPLY: FSC 24429; P/N 3D5-3.0. | PS1 | | 1 |
| R1 | RESISTOR, variable: 0 ohm to 10k range; FSC 81349. | R1 | RV6NAYSD103A | 1 |
| | KNOB, control: FSC 86797, P/N RB-67-1-DC-M.125 BLK | | | 1 |
| S1 | SWITCH, rotary: 6-position; FSC 81073; P/N | S1 | | 1 |
| | KNOB, control: FSC 86797, P/N | | | 1 |
| S2 | SWITCH, pushbutton: SPDT: 1A; 28 V dc; FSC 08719; P/N 10648E L-54. | S2 | | 1 |
| S3,S4 | SWITCH, toggle: FSC 27193; P/N 8868K7 | S3, S4 | | 2 |

Table 6-1. DF Chassis Assembly (Sheet 3 of 3)

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | J AN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| TB1 | TERMINAL BOARD: FSC 81348. | TB1 | 37TB3 | 1 |
| W2 | CABLE ASSEMBLY: FSC 28815; P/N 10-129386-1 (see table 6-2). | W2 | | 1 |
| W3 | CABLE ASSEMBLY: FSC 28815; P/N 10-129388-1 (see table 6-3). | W3 | | 1 |
| W4 | CABLE ASSEMBLY: FSC 28815; P/N 10-129388-2 (see table 6-3). | W4 | | 1 |
| W5 | CABLE ASSEMBLY: FSC 28815; P/N 10-129389-1 (see table 6-4). | W5 | | 1 |
| W6 | CABLE ASSEMBLY: FSC 28815; P/N 10-129380-1 (see table 6-5). | W6 | | 1 |

Table 6-2. Cable Assembly W2

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | J AN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| | CABLE ASSEMBLY: FSC 28815; P/N 10-129386-1. | | | 1 |
| P1 (A2A2P5) | CONNECTOR, plug: electrical; 25-pin; 20-gauge; FSC 71468; P/N DBM-25P. | P1 | | 1 |
| P2 (A2A1P2) | CONNECTOR, receptacle: electrical; 9-socket; 20-gauge; FSC 71468; P/N DEM-9S. | P2 | | 1 |
| P3 (A2A1P1) | CONNECTOR, plug: electrical; 31-pin; FSC 71468; P/N 2DA31P. | P3 | | 1 |
| P4 (A2A2P1) | CONNECTOR, plug: electrical; coax; FSC 26805, P/N 2031-5002-00. | P4 | | 1 |

Table 6-3. Cable Assemblies W3 and W4

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| | CABLE ASSEMBLY: FSC 28815; P/N 10-129388-1, -2. | | | |
| P1 (A2A1J7), (A2A2P3) | CONNECTOR, plug: electrical; coax; FSC 26805; P/N 2031-5002-00. | P1 | | 1 |
| P2 (A2J4), (A2J3) | CONNECTOR, plug: electrical; coax; FSC 81349. | P2 | M39012/16-0101 | 1 |

Table 6-4. Cable Assembly W5

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| | CABLE ASSEMBLY: FSC 28815;<br>P/N 10-129389-1. | | | |
| | CONNECTOR, plug: electrical;<br>coax; FSC 26805;<br>P/N 2031-5002-00. | | | 2 |
| | CABLE, RF: 50 ohms; FSC 81349. | | M17/084-RG223 | 1 |

Table 6-5. Cable Assembly W6

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| | CABLE ASSEMBLY: FSC 28815; P/N 10-129380-1. | | | |
| A2A2P6 | CONNECTOR, receptacle: 25-socket; 20-gauge, FSC 71468; P/N DBM-25S. | A2A2P6 | | 1 |
| A2A2P11 | CONNECTOR, receptacle: 37-socket; 20-gauge; FSC 71468; P/N DC37P | A2A2P11 | | 1 |
| A2J2 | CONNECTOR, receptacle: 55-pin; 24-gauge; FSC 96906. | A2J2 | MS3120E22-55S | 1 |
| A2J5 thru A2J7 | CONNECTOR, plug: coax; FSC 13511; P/N 13925. | A2J5, A2J6, A2J7 | | 3 |
| A2J13 | CONNECTOR, receptacle: 55-socket; 20-gauge; FSC 96906. | A2J13 | MS3122E22-55SW | 1 |
| A2J15 | CONNECTOR, receptacle: 41-pin; 20-gauge; FSC 96906. | A2J15 | MS3122E20-41P | 1 |

Table 6-6. System Interconnect Cable Assemblies W1 thru W7

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| W1 thru W3 | CABLE ASSEMBLY: FSC 28815; P/N 10-165307-1. | W1 thru W3 | | 3 |
| W1 | CABLE ASSEMBLY: FSC 28815; P/N 10-164760-1 (see table 6-7). | W1 | | 1 |
| W2 | CABLE ASSEMBLY, RF: FSC 28815; P/N 10-165306-1 (see table 6-8). | W2 | | 1 |
| W3 | CABLE ASSEMBLY, RF: FSC 28815; P/N 10-165306-2 (see table 6-9). | W3 | | 1 |
| W4 | CABLE ASSEMBLY: FSC 28815; P/N 10-130919-1 (see table 6-10). | W4 | | 1 |
| W5 | CABLE ASSEMBLY, FLUXGATE POWER: FSC 28815; P/N 10-165962-1 (see table 6-11). | W5 | | 1 |
| W6 | CABLE ASSEMBLY, FLUXGATE SENSOR: FSC 28815, P/N 10-165963-1 (see table 6-12). | W6 | | 1 |
| W7 | CABLE ASSEMBLY, REMOTE DISPLAY: FSC 28815; P/N 10-165961-1 (see table 6-13). | W7 | | 1 |

Table 6-7. System Cable Assembly W1

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | J AN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| W1 | CABLE ASSEMBLY: FSC 28815; P/N 10-164760-1 | W1 | | 1 |
| P1 (A1J 1) | CONNECTOR, plug: electrical; FSC 96906. | P1 | MS3126E22-55S | 1 |
| P2 (A2J 2) | CONNECTOR, plug: electrical; FSC 96906. | P2 | MS3126E22-55P | 1 |

Table 6-8. System RF Cable Assemblies W2 and W3

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| W2 and W3 | CABLE ASSEMBLY, RF: FSC 28815; P/N 10-165306-1 and -2. | W2 and W3 | | 2 |
| P1 | CONNECTOR, N: FSC 81349; P/N UG536B/U. | P1 | | 1 |
| P2 | CONNECTOR, coax: FSC 81349; P/N M39012/16-0101. | P2 | | 1 |

Table 6-9. System Cable Assembly W4

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | J AN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| W4 | CABLE ASSEMBLY: FSC 28815; P/N 10-130919-1. | W4 | | 1 |
| | CONNECTOR: electrical; FSC 96906. | | MS3126F12-3S | |

Table 6-10. Fluxgate Power Cable Assembly W5

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| W5 | CABLE ASSEMBLY, FLUXGATE POWER: FSC 28815, P/N 10-165962-1. | W5 | | 1 |
| P1 | CONNECTOR, plug: electrical; 8-pin; 16-gauge; FSC 96906. | P1 | MS3126F16-8P | 1 |
| P2 | CONNECTOR, receptacle: electrical FSC 96906. | P2 | MS27506B12-2 | 1 |

Table 6-11. Fluxgate Sensor Cable Assembly W6

| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | JAN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| W6 | CABLE ASSEMBLY, FLUXGATE SENSOR: FSC 28815, P/N 10-165963-1. | W6 | | 1 |
| P1 | CONNECTOR, plug: electrical; 41-socket; 20-gauge; FSC 96906. | P1 | MS3126F20-41S | 1 |
| P2 | CONNECTOR, plug: electrical; 18-socket; 20-gauge; FSC 96906. | P2 | MS27484E14F18P | 1 |

Table 6-12. Remote Display Cable Assembly W7.

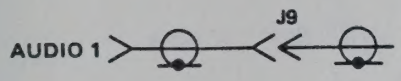
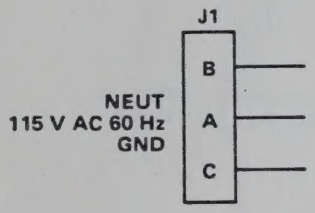
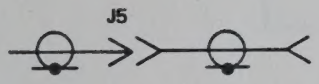
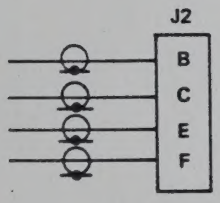
| REFERENCE SYMBOL OR PART NUMBER | NAME OF PARTS AND DESCRIPTION | ALL SYMBOLS AND PART NUMBERS INVOLVED | J AN OR MIL TYPE NUMBER | TOTAL NUMBER PARTS PER END ITEM |
|---|---|---|---|---|
| W7 | CABLE ASSEMBLY, REMOTE DISPLAY: FSC 28815; P/N 10-165961-1. | W7 | | 1 |
| P1 | CONNECTOR, receptacle: electrical; FSC 96906. | P1 | MS27484E20F41PA | 1 |
| P2 | CONNECTOR, plug: electrical; 19-socket; 20 gauge; FSC 96906. | P2 | MS3116F14-19S | 1 |

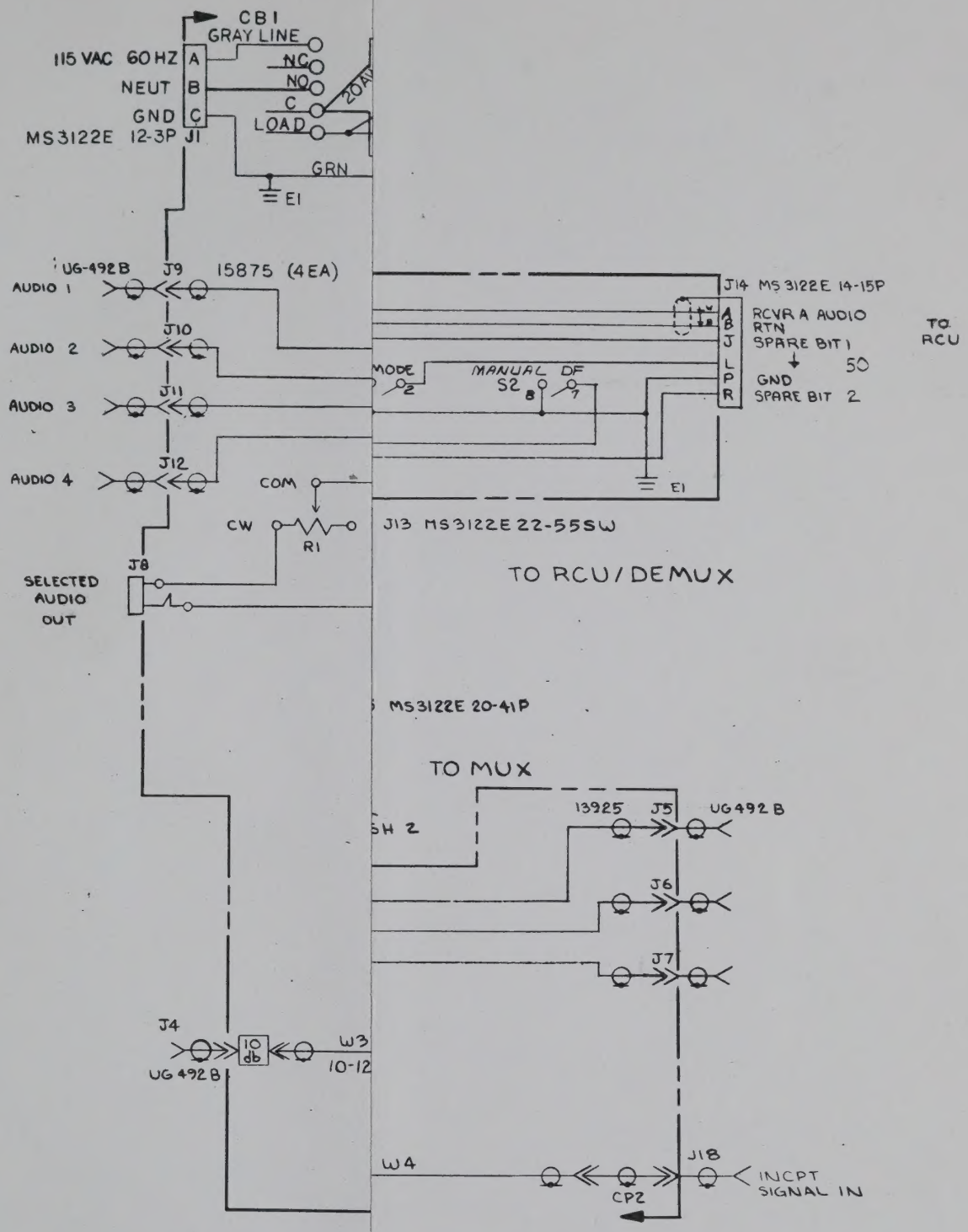
# CHAPTER 7

# ILLUSTRATIONS

7-1. INTRODUCTION. This chapter contains a wiring diagram and component location diagram for the DF Chassis. Table 7-1 lists and defines the symbols used for the diagrams.

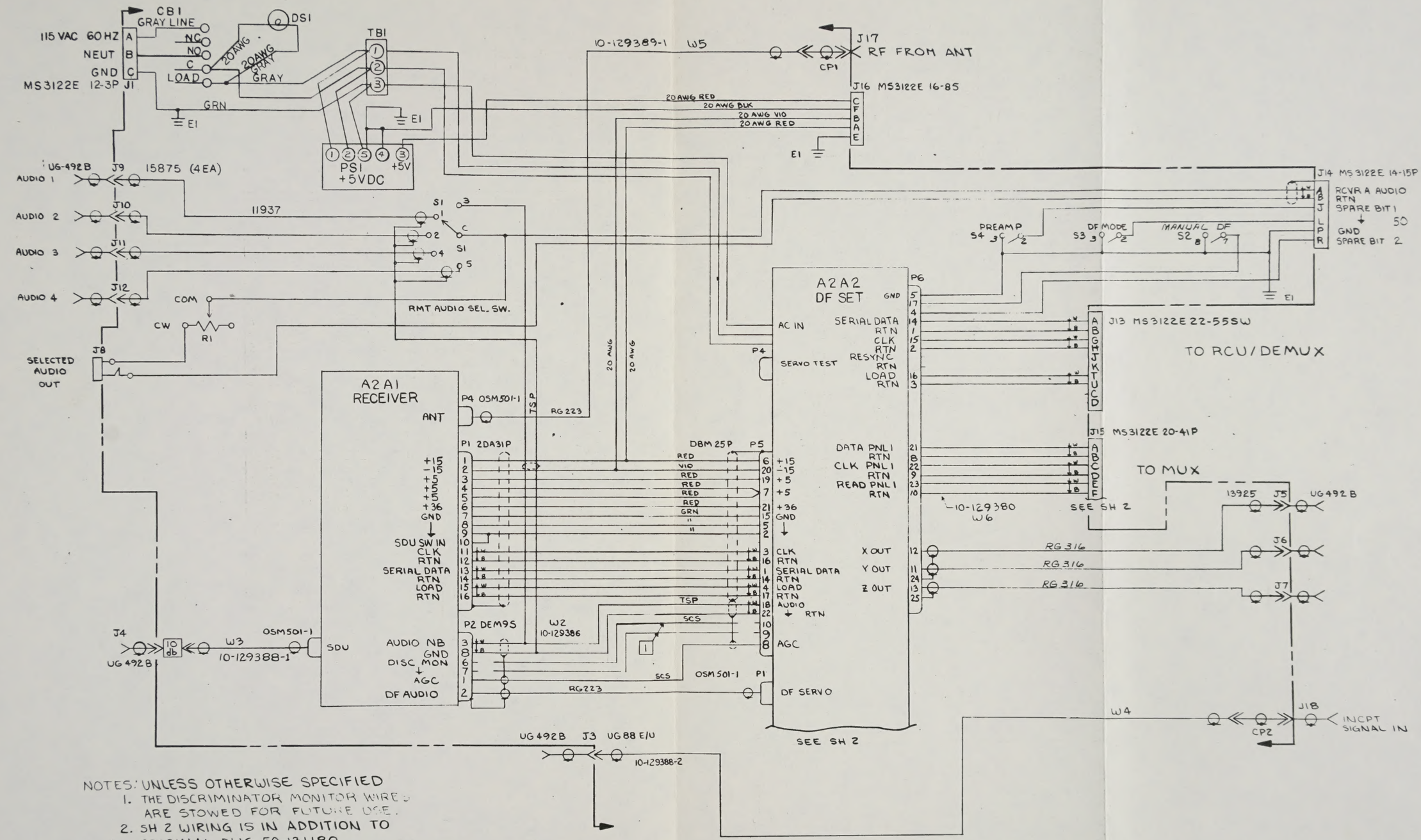
Table 7-1. Description of Illustration Symbols

| Symbol | Definition |
|---|---|
|  | An input on the wiring diagram with signal designation, type of connector, and connector designation. |
|  | An input on the wiring diagram with signal designation, connector designation, and pin numbers. |
|  | An output on the wiring diagram with type and designation of connector. |
|  | An output on the wiring diagram with type of connector, connector designation, pin numbers, and signal designations. |




NOTES: UNLESS OTHE
1. THE DISCRIMIN
ARE STOWED
2. SH 2 WIRING I
ORIGINAL DW
3. ALL WIRES AR

Figure 7-1. DF Chassis Wiring Diagram (Sheet 1 of 2)




NOTES: UNLESS OTHERWISE SPECIFIED

1. THE DISCRIMINATOR MONITOR WIRES ARE STOWED FOR FUTURE USE.
2. SH 2 WIRING IS IN ADDITION TO ORIGINAL DWG 50-131180.
3. ALL WIRES ARE STRANDED 24 AWG WHT.

Figure 7-1. DF Chassis Wiring Diagram (Sheet 1 of 2)

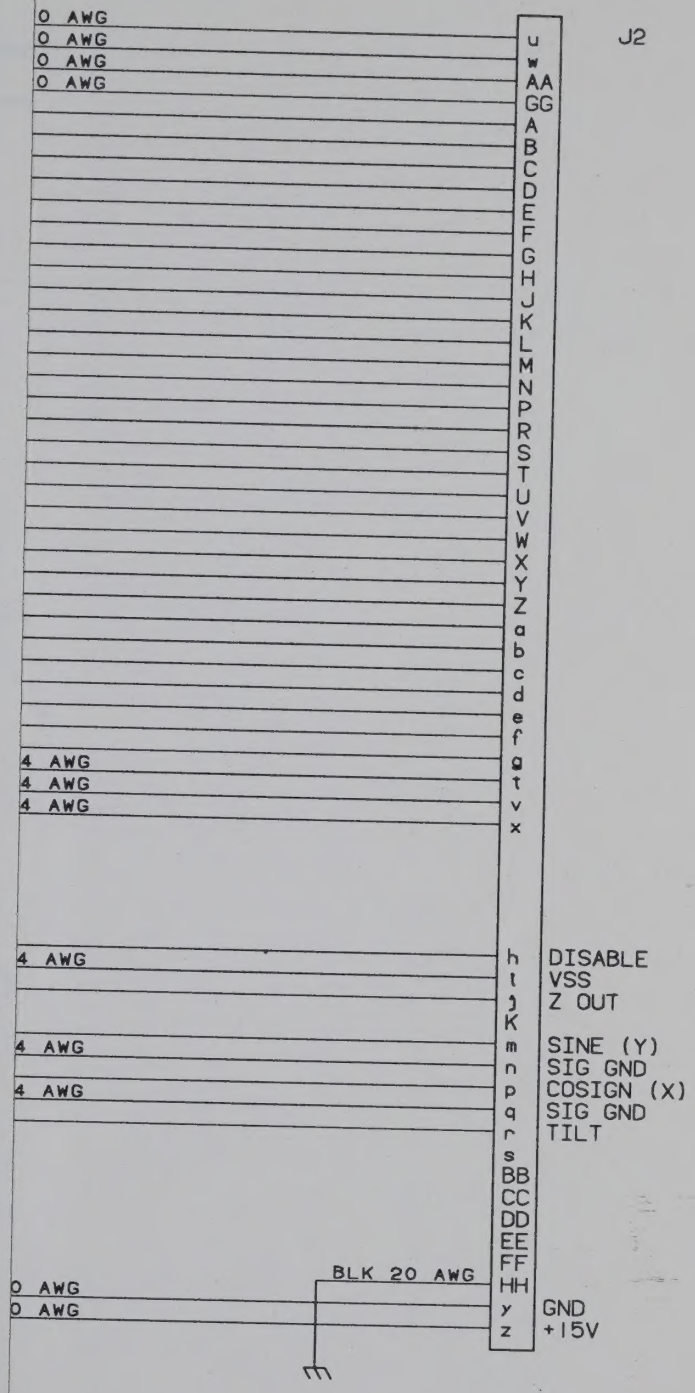



Figure 7-1. DF Chassis Wiring Diagram (Sheet 2 of 2)

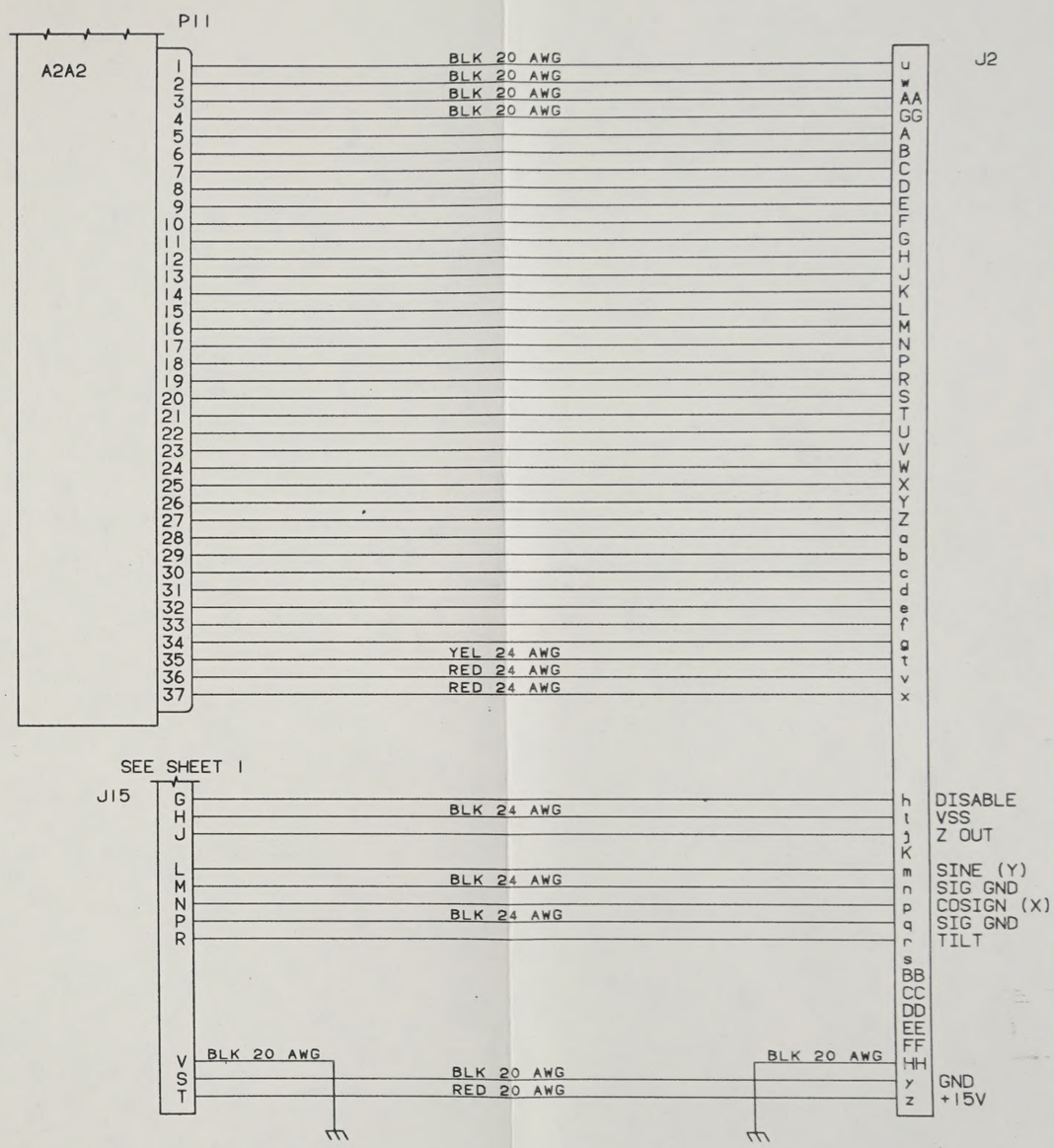



Figure 7-1. DF Chassis Wiring Diagram (Sheet 2 of 2)

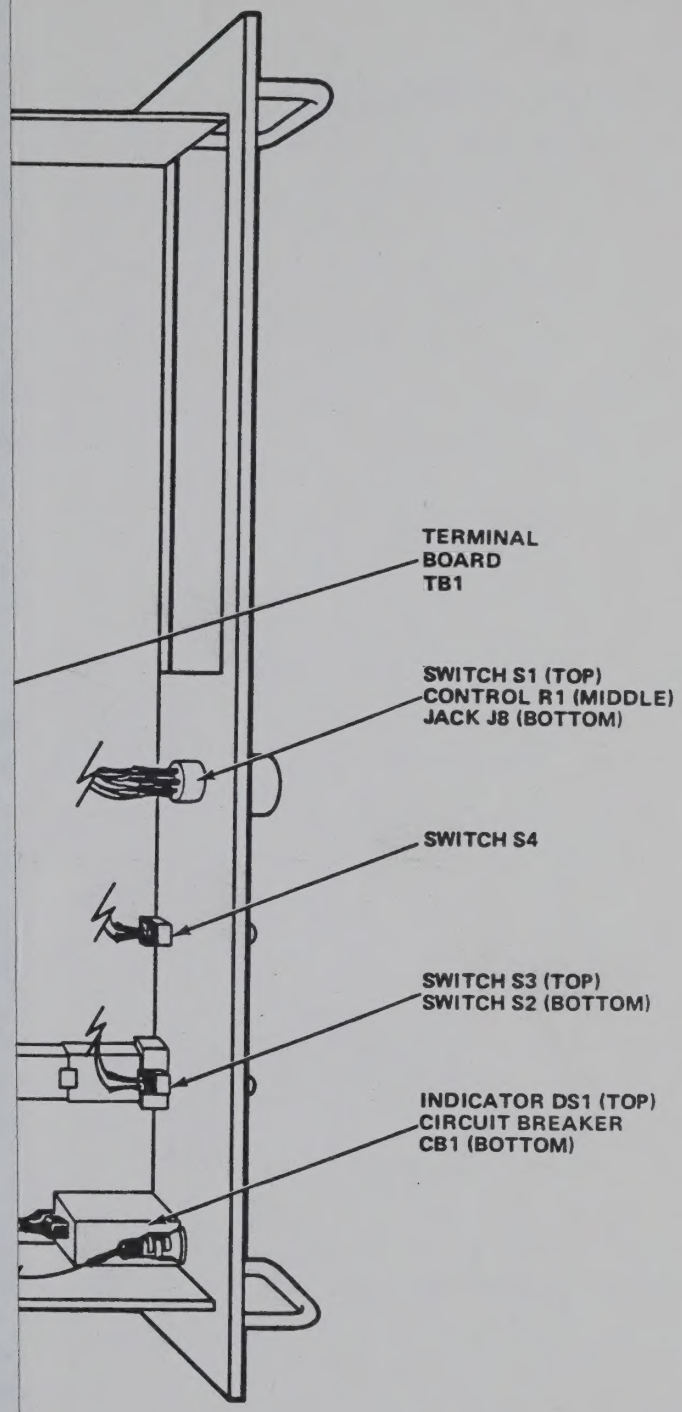



Figure 7-2. DF Chassis Component Locations

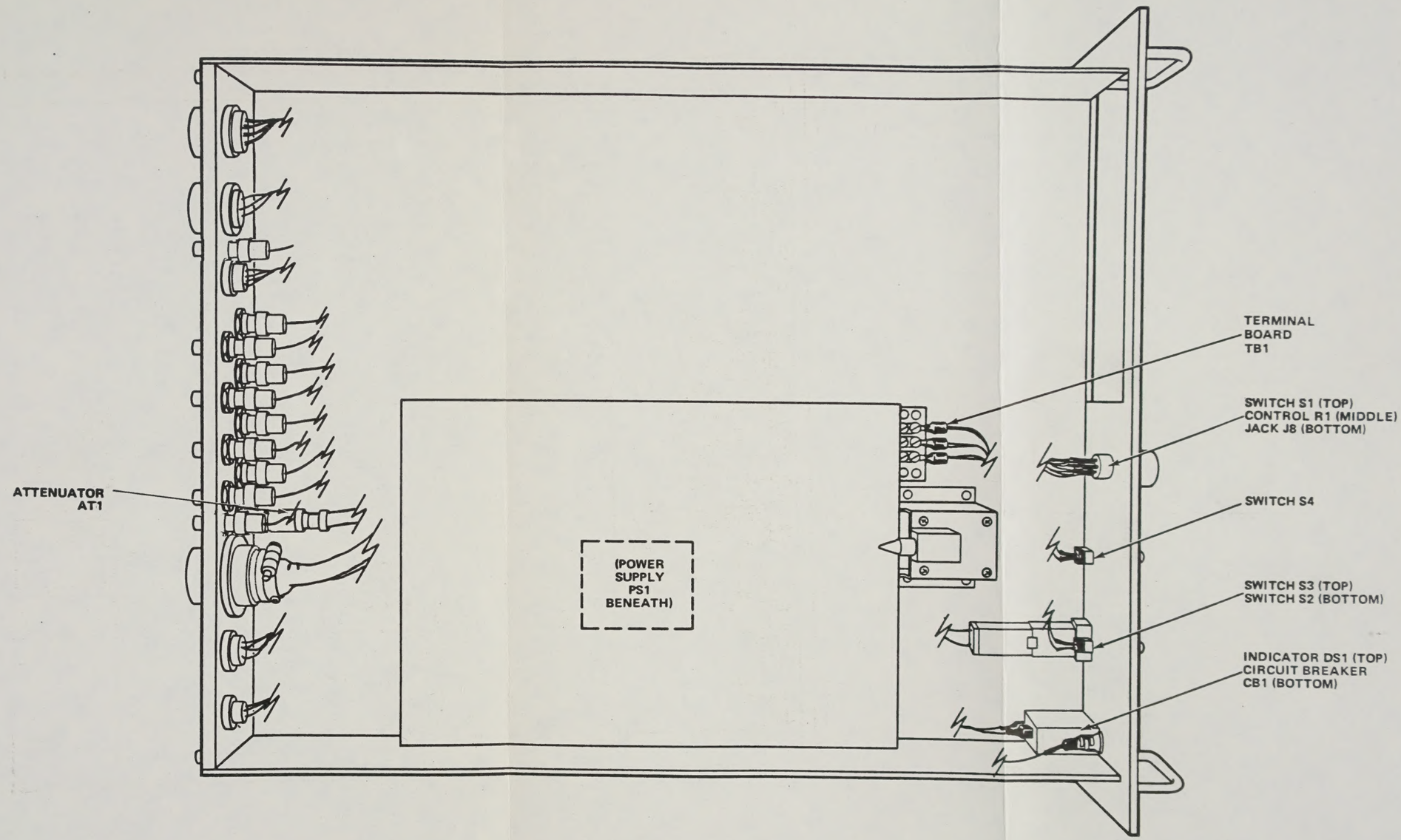



Figure 7-2. DF Chassis Component Locations